Compal Broadband Networks

CG7486E
Wireless Gateway Series

User Guide

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1 Overview

The CBN CG7486E Wireless Gateway is the worldwide most compact EuroDOCSIS 3.0 Gateway with stylish and elegant outlook, designed for your home, home office, or small business/enterprise. It can be used in households with one or more computers capable of wireless connectivity for remote access to the wireless gateway.

This user guide provides product overview and setup information for the CG7486E. It also provides instructions for installing the wireless gateway and configuring the wireless LAN, Ethernet, router, DHCP, and security settings.

Contact Information

- For any questions or assistance with the CG7486E Wireless Gateway, contact your Internet Service provider.

Standard Features

The CG7486E Wireless Gateway combines high-speed Internet access, networking, and computer security for a home or small-office LAN. It offers the following features:

- Combination of five separate products in one compact unit — a EURO DOCSIS® 3.0 cable modem, IEEE 802.11b/g/n/ac wireless access point, Ethernet 10/100/1000 Base-T connections, and firewall.
- An integrated high-speed cable modem for continuous broadband access to the Internet and other online services with much faster data transfer than traditional dial-up or ISDN modems.
- Advanced firewall for enhanced network security from undesired attacks over the Internet. It supports stateful-inspection, intrusion detection, DMZ, denial-of-service attack prevention, and Network Address Translation (NAT).
- One broadband connection for up to 253 computers to surf the web; all computers on the LAN communicate as if they were connected to the same physical network.
- Two 10/100/1000Base-T Ethernet uplink ports supporting half- or full-duplex connections with auto-MDIX capability.

- An IEEE 802.11n/ac wireless access point to enable laptop users to remain connected while moving around the home or small office or to connect desktop computers without installing network wiring. Depending on distance, wireless connection speeds can vary.
- CG7486E wireless function supports Wi-Fi 2.4G/5G dual-band mode.
- A secure Wireless Fidelity (Wi-Fi) broadband connection for Wi-Fi enabled devices on your network, such as your mobile, laptops, tablet, printers, PDAs, and desktops.
- Routing for a wireless LAN (WLAN) or a wired Ethernet LAN; you can connect more than two computers using hubs and/or switches
- A built-in DHCP server to easily configure a combined wired and/or wireless Class C private LAN.
- Virtual private network (VPN) pass-through operation supporting IPSec, PPTP, or L2TP to securely connect remote computers over the Internet.
- CG7486E Configuration Manager (CMGR) which provides a graphical user interface (GUI) for easy configuration of necessary wireless, Ethernet, router, DHCP, and security settings.

CG7486E LAN Choices

You can connect up to 253 client computers to the CG7486E using one or any combination of the following network connections:

- Wi-Fi wireless LAN (WLAN)
- Ethernet local area network (LAN)

Wireless LAN

Wireless communication occurs over radio waves rather than a wire. Like a cordless telephone, a WLAN uses radio signals instead of wires to exchange data. A wireless network eliminates the need for expensive and intrusive wiring to connect computers throughout the home or office. Mobile users can remain connected to the network even when carrying their laptop to different locations in the home or office.

Each computer or other device on a WLAN must be Wi-Fi enabled with either a built-in or external wireless adapter.

Laptops — Use a built-in wireless notebook adapter, a wireless PCMCIA slot adapter, or a wireless USB adapter.

Desktops — Use a wireless PCI adapter, wireless USB adapter, or compatible product in the PCI slot or USB port, respectively.

Sample Wireless Network Connections (CG7486E model shown)

Your maximum wireless operation distance depends on the type of materials through which the signal must pass and the location of your CG7486E and clients (stations). CBN cannot guarantee wireless operation for all supported distances in all environments.

Note: To get better wireless coverage, please put your CG7486E wireless gateway VERTICALLY ONLY

Wired Ethernet LAN

You can easily connect any PC with an Ethernet cable to the CG7486E Ethernet port. Because the CG7486E Ethernet port supports auto-MDIX, you can use a straight- through or cross-over cable to connect a hub, switch, or computer. Use category 5, or better, cabling for all Ethernet connections.

Sample Ethernet to Computer Connection (CG7486E model shown)

A wired Ethernet LAN with more than two computers requires one or more hubs, switches, or routers. You can:

- Connect a hub or switch to any Ethernet port on the CG7486E.
- Use Ethernet hubs, switches, or routers to connect up to any combination of 253 computers and wireless clients to the CG7486E.

More detailed information on Ethernet cabling is beyond the scope of this document.

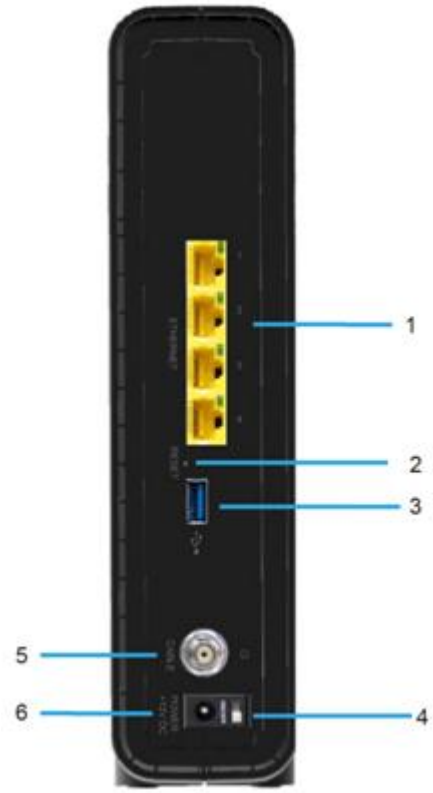
Front Panel

The CG7486E front panel contains indicator lights and the Wi-Fi / WPS button which is used to configure Wi-Fi Protected Security (WPS) on compatible clients connected to the CG7486E network.

The CG7486E front panel LED indicators provide the following status information for power, communications, and errors:

	LED	Flashing	On
1	POWER	Not applicable — LED does not flash	Green: Power is properly connected
2	ONLINE	Scanning for Internet connection; transmitting or receiving data over the Internet	Green: Connected to Internet
3	WIRELESS 2.4GHz 5GHz	Amber: WPS function is enabled.	Green: Wi-Fi wireless interface is active now.

Rear Panel



The CG7486E (shown above) rear panel contains the following cabling port and connectors:

	Item	Description
1	LAN 1 2 3 4	Use any Ethernet port to connect an Ethernet-equipped computer, hub, bridge, or switch using an RJ-45 cable. Activity LED - Green LED defines the activity of the Ethernet connector. When LED is ON, this indicates that there is no data traffic and a connection is stabilized. When LED is FLASHING, this indicates that there is data being transmitted upstream or downstream. When LED is OFF, this indicates that the unit is not powered or there is no Ethernet connection.
2	RESET	Press and hold the RESET button for five seconds or longer to restore CG7486E to factory default settings. After factory default, settings are restored, the gateway will restart and may take 5 to 30 minutes to find and lock on the appropriate communication channels.
3	USB	USB host port for print server or network storage function
4	POWER SWITCH	Switch gear for power on/off the CG7486E.
5	COAX	Connect the CG7486E to a cable wall outlet.
6	POWER	Provide power to the CG7486E.

MAC Label

The CG7486E Media Access Control (MAC) label is located on the bottom of the CG7486E. The label contains the MAC address which is a unique, 48-bit value that identifies each Ethernet network device. To receive data service, you will need to provide the MAC address marked HFC MAC ID to your Internet Service provider."

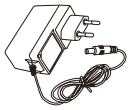
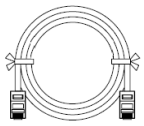
Model: CG7486E
Input Voltage: + 12VDC ⎓ ;2.0A
EAN CODE: 4715309380673
Nombre de Red WiFi(2,4 GHz): ONO3B23
Nombre de Red WiFi(5 GHz): ONO3B23 – 5G
Clave de Red WiFi: rvH71QHhjx0x
ASSEMBLED IN TAIWAN
S/N: 606799408000002901010880
HFC MAC ID: 5C353BD9104A
GATEWAY MGMT MAC ID: 5C353BD91302

Note: Label may differ according to local settings or requirements.

2 Getting Started

Inside the Box

Before you install the CG7486E Wireless Gateway, verify that the following items are included in the box with the CG7486E:

Item		Description
Power Adapter		Connect the CG7486E to an AC electrical outlet
WiFi Sticker Card		For user placing the WiFi SSID/Password information for 2.4GHz and 5GHz for future use.
Ethernet Cable		Connect the CG7486E to PC or Notebook

You must have the latest service packs and patches installed on your computer for your operating system.

You will need a 75-ohm coaxial cable with F-type connectors to connect the CG7486E to the nearest cable outlet. If a TV is connected to the cable outlet, you may need a 5 to 900 MHz RF splitter and two additional coaxial cables to use the TV and the CG7486E.

Before You Begin

Take the following precautions before installing the CG7486E:

- Postpone installation until there is no risk of thunderstorm or lightning activity in the area.
- To avoid potential shock, always unplug the power cord from the wall outlet or other power source before disconnecting it from the CG7486E rear panel.
- To prevent overheating the CG7486E, do not block the ventilation holes on the sides of the unit. Do not open the unit. Refer all service to your Internet Service provider.

Check that you have the required cables, adapters, and adapter software. Verify that the proper drivers are installed for the Ethernet adapter on each networked computer. For information on WLAN setup, see **Setting up Your Wireless LAN**.

System Requirements

Your computer must meet the following minimum requirements:

- Computer with Pentium© class or better processor
- Any web browser, such as Microsoft Internet Explorer, Netscape Navigator®, or Mozilla® Firefox®

Position Your Wireless Router

The CBN CG7486E Wireless Gateway lets you access your network from anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your Gateway. For example, the thickness and number of walls the wireless signal passes through can limit the range. For best results, place your router under the following conditions:

- First and foremost, don't settle prematurely on a location for the wireless access point or router. Experiment; try placing the device in several different promising locations. While trial-and-error may not be the most scientific way to find a good spot for your equipment, it is often the only practical way to assure the best possible Wi-Fi performance.
- Strive to install the wireless access point or router in a central location. If you have only one wireless client, installing the base station near this client is best. For WLANs with multiple wireless clients, find a good compromise position. Clients too far away from the base station will manage only 10% - 50% the bandwidth of clients nearby to it. You might need to sacrifice the network performance of one client for the good of the others.

- Next, avoid physical obstructions whenever possible. Any barriers along the "line of sight" between client and base station will degrade a Wi-Fi radio signal. Plaster or brick walls tend to have the most negative impact, but really any obstruction including cabinets or furniture will weaken the signal to some degree. Obstructions tend to reside closer to floor level; therefore, some folks prefer to install their wireless access point / router on or near the ceiling.
- Avoid reflective surfaces whenever possible. Some Wi-Fi signals literally bounce off of windows, mirrors, metal file cabinets and stainless steel countertops, lessening both network range and performance.
- Install the wireless access point or router at least 1 m (3 feet) away from other home appliances that send wireless signals in the same frequency range. Such appliances include some microwave ovens, cordless telephones, baby monitors, and home automation equipment like X-10 devices. Any appliance that transmits in the same general range as802.11b or 802.11g (2.4 GHz) can generate interference.
- Likewise, install the unit away from electrical equipment that also generates interference. Avoid electric fans, other motors, and fluorescent lighting.

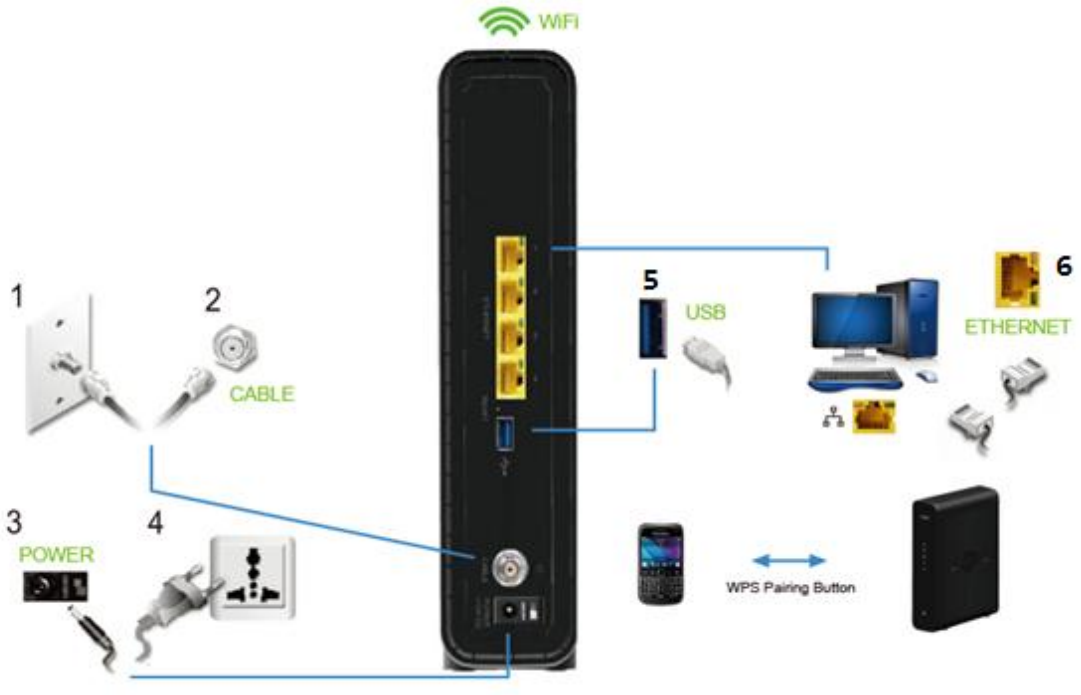
- ***Note: To get better wireless coverage, please put your CG7486E wireless gateway VERTICALLY ONLY***

Connecting the CG7486E

Before starting, be sure the computer is turned on and the CG7486E power cord is unplugged.

1. Connect one end of the coaxial cable to the cable outlet or splitter.
2. Connect the other end of the coaxial cable to the Cable connector on the CG7486E. Hand-tighten the connectors to avoid damaging them.
3. Plug the power cord into the Power port on the CG7486E.
4. Plug the other end of the power cord into an electrical wall outlet.

   This automatically powers on the gateway. You do not need to unplug the gateway when it is not in use. The first time you plug in the CG7486E, allow it 5 to 30 minutes to find and lock on the appropriate communications channels.
5. Connect the Ethernet cable to the Ethernet port on the computer, and connect the other end of the Ethernet cable to the Ethernet port on the gateway.



6. Check that the LEDs on the front panel cycle through the following sequence:

CG7486E LED Activity during Startup

LED	Description
POWER	Turns on when AC power is connected to the CG7486E. Indicates that the power is connected properly.
ONLINE	Flashes during CG7486E registration and configuration. Changes to solid green when the CG7486E is registered successfully and ready for Internet access

Setting up Internet Access

After installing the CG7486E, check that you can connect to the Internet. You can retrieve an IP address for your computer's network interface using one of the following options:

- Retrieve the statically defined IP address and DNS address
- Automatically retrieve the IP address using the Network DHCP server

The CBN CG7486E Wireless Gateway provides a DHCP server on its LAN. It is recommended that you configure your LAN to obtain the IPs for the LAN and DNS server automatically.

Make sure all computers on your LAN are configured for TCP/IP. After configuring TCP/IP on your computer, you should verify the IP address.

> **Note: For UNIX or Linux systems follow the instructions in the applicable user documentation.**

Configuring TCP/IP in Windows XP

1. Open the Control Panel.
2. Double-click Network Connections to list the Dial-up and LAN or High-Speed Internet connections.
3. Right-click the network connection for your network interface.
4. Select Properties from the drop-down menu to display the Local Area Connection Properties window. Be sure Internet Protocol (TCP/IP) is checked.
5. Select Internet Protocol (TCP/IP) and click Properties to display the Internet Protocol (TCP/IP) Properties window.
6. Select Obtain an IP address automatically and Obtain DNS server address automatically.

7. Click OK to save the TCP/IP settings and exit the TCP/IP Properties window.
8. Close the Local Area Connection Properties window and then exit the Control Panel.
9. When you complete the TCP/IP configuration, continue with Verifying the IP Address in Windows XP

Verifying & Renewing the IP Address in Windows XP

1. Click Start > Run. In the Run window, enter "cmd" then click OK.
2. On the command prompt, enter "ipconfig/release" then press [Enter].
3. Once the IP address becomes 0.0.0.0, enter "ipconfig/renew" then press [Enter]. to obtain a new IP address.
4. When finished, click the **X** in the upper right corner to close the black screen

Configuring TCP/IP in Windows 7

1. Open the Control Panel.
2. Click Network and Internet to display the Network and Internet window.
3. Click Network and Sharing Center to display the Network and Sharing Center window.
4. Click change adapter settings
5. Right-click the network connection for the network interface you want to change.
6. Click Properties to display the Local Area Connection Properties window
7. Select Internet Protocol Version 4(TCP/IPv4), double click it or click Properties
8. Select Obtain an IP address automatically and Obtain DNS server address automatically.
9. Click OK to save the TCP/IP settings and close the Internet Protocol Version 4 (TCP/IPv4) Properties window.
10. Click OK to close the Local Area Connection Properties window.
11. Close the remaining windows and exit the Control Panel.
12. When you complete the TCP/IP configuration, continue with Verifying the IP Address in Windows 7

Verifying & Renewing the IP Address in Windows 7

1. Click the Pearl button then enter "cmd" on the Search bar.
2. On the command prompt, enter "ipconfig/release" then press [Enter] then enter "ipconfig/renew" and press [Enter] again to obtain a new IP address.
3. When finished, click the **X** in the upper right corner to close the black screen

Configuring TCP/IP in Windows 8

1. Press WinKey+I and in shown strip *Settings*
2. Open the Control Panel.
3. Click Network and Internet to display the Network and Internet window.
4. Click Network and Sharing Center to display the Network and Sharing Center window.
5. Click change adapter settings
6. Right-click the network connection for the network interface you want to change.
7. Click Properties to display the Local Area Connection Properties window
8. Select Internet Protocol Version 4(TCP/IPv4), double click it or click Properties
9. Select Obtain an IP address automatically and Obtain DNS server address automatically.
10. Click OK to save the TCP/IP settings and close the Internet Protocol Version 4 (TCP/IPv4) Properties window.
11. Click OK to close the Local Area Connection Properties window.
12. Close the remaining windows and exit the Control Panel.
13. When you complete the TCP/IP configuration, continue with Verifying the IP Address in windows 8

Verifying & Renewing the IP Address in Windows 8

1. Press the Windows key on your keyboard and then enter "command prompt" to display the Command Prompt shortcut. A search box on right side of the screen will appear.
2. Click Command Prompt
3. In the Command Prompt, enter "ipconfig /release" then press [Enter] to release your computer's current IP address.
Enter "ipconfig /renew" then press [Enter] to obtain a new IP address.
When finished, click the **X** in the upper right corner to close the black screen.

Setting Up a Wi-Fi Network

Do the following to set up a Wi-Fi network using the WPS button on the CG7486E :

1. Power on the CG7486E.
2. Power on the WPS-enabled devices you want to have access to the network, such as a PC, router, or telephone.

   The Wi-Fi network will automatically detect the WPS devices.
3. Press WPS button on the CG7486E.

4. If applicable, press WPS button on the other WPS devices.

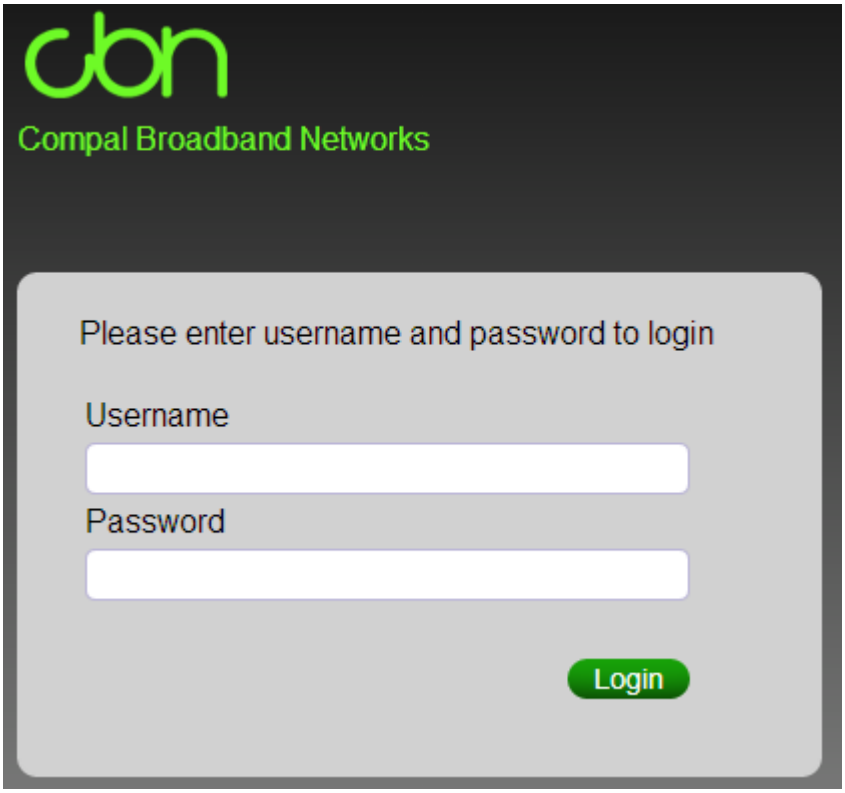
3 Status

For normal operation, you do not need to change most default settings. Carefully consider the following caution statements:

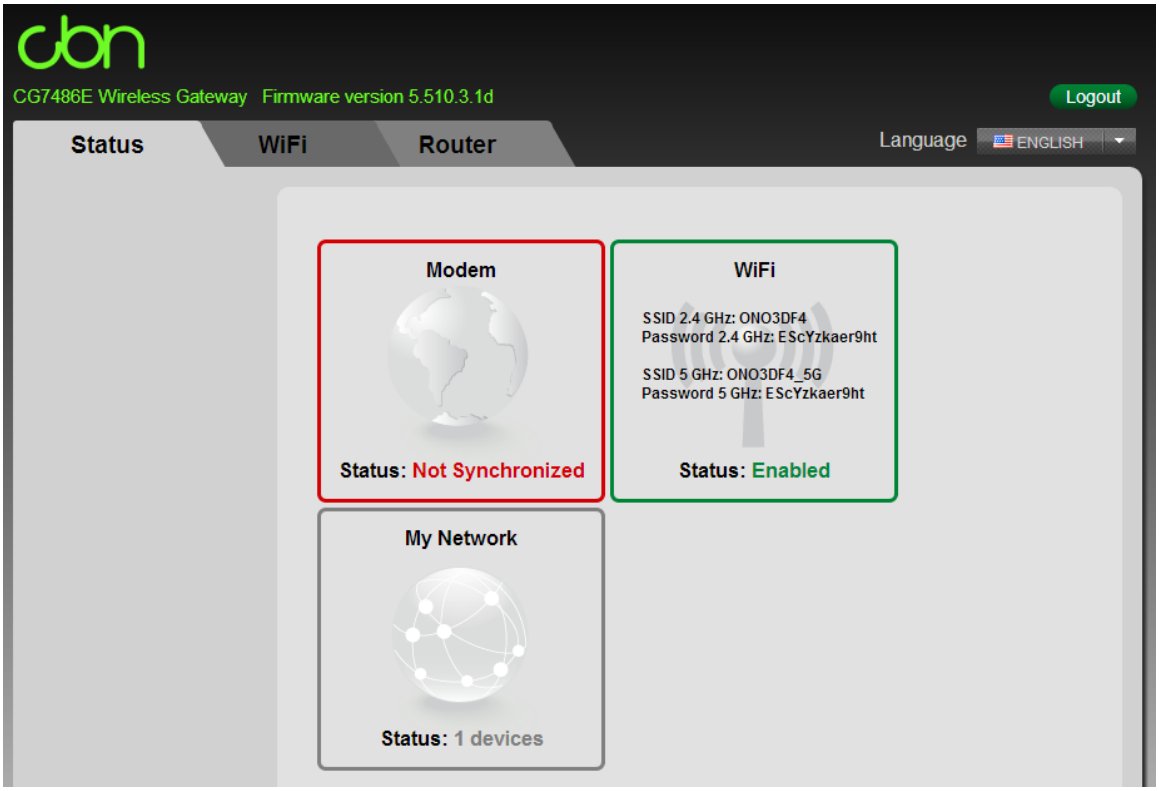
Starting the CG7486E Configuration Manager (CMGR)

The CG7486E Configuration Manager (CMGR) allows you to change and view the settings on your CG7486E.

In order to login CMGR, you should key in the correct Username and Password. By default, they should be admin and admin.



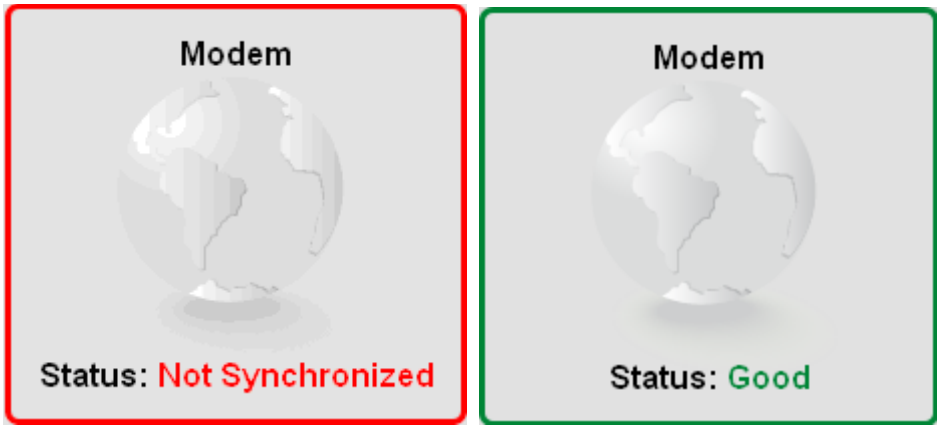
After login management system, the home page shows the current status of CG7486E.



Note: may differ according to local settings or requirements.

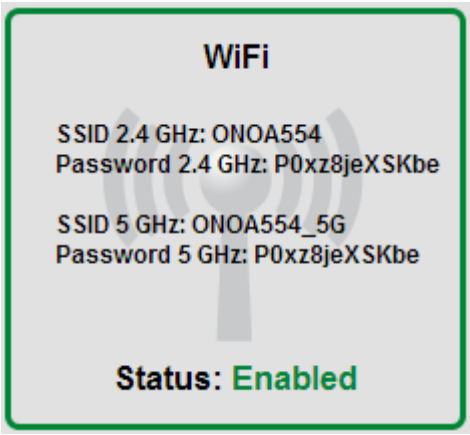
Modem

This item displays the status of cable modem, the red block means off-line state and the green means on-line. Users can press it to connect to the next page for more details of the cable modem's HFC and IP network connectivity.



WiFi

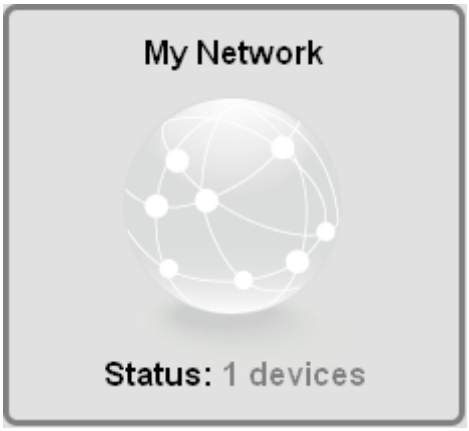
This item shows current WiFi status and you can press it to connect to the next page for more details.



Note: may differ according to local settings or requirements.

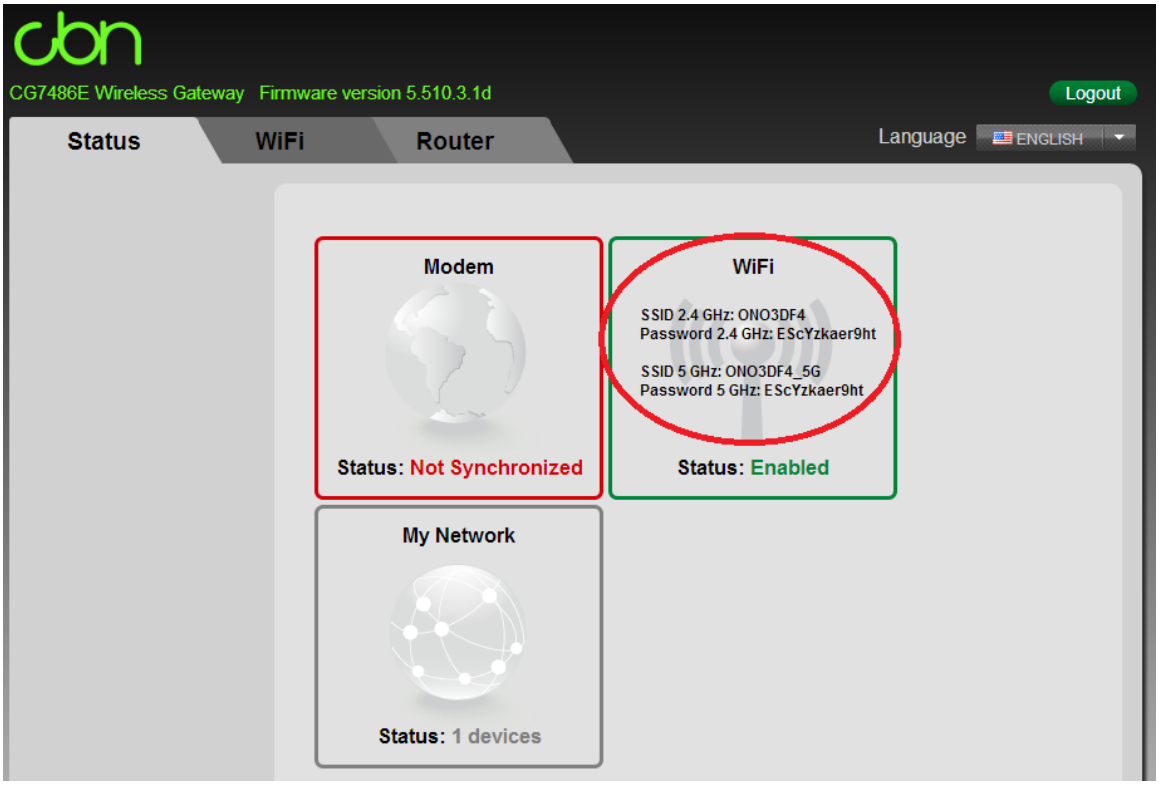
My Network

This item shows how many CPEs connect to CG7486E.



4 Wireless Pages

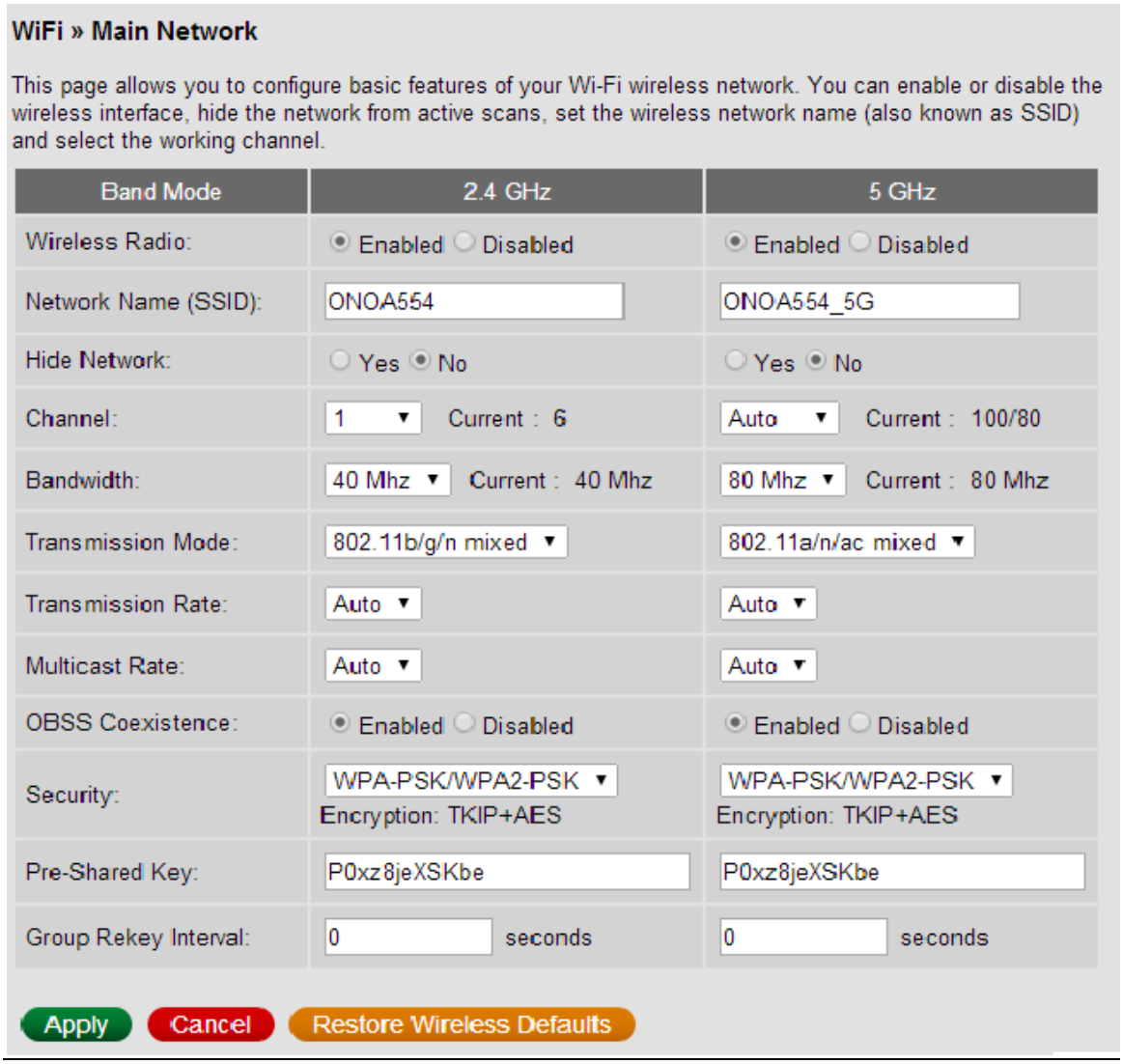
The CG7486E Wireless Pages allow you to configure your wireless LAN (WLAN). You can click WIFI submenu option to view or change the configuration information for that option.



Note: may differ according to local settings or requirements.

Basic Settings

CG7486E is a dual band product and all the basic settings of 2.4GHz and 5GHz can be changed in this page. You can configure basic features of your Wi-Fi wireless network, including to enable or to disable the wireless interface, to hide the network from active scans, to set the wireless network name (also known as SSID), to change security key for wireless connection and to select the working channel.



WiFi » Main Network

This page allows you to configure basic features of your Wi-Fi wireless network. You can enable or disable the wireless interface, hide the network from active scans, set the wireless network name (also known as SSID) and select the working channel.

Band Mode	2.4 GHz	5 GHz
Wireless Radio:	Enabled Disabled	Enabled Disabled
Network Name (SSID):	ONOA554	ONOA554_5G
Hide Network:	Yes No	Yes No
Channel:	1 Current : 6	Auto Current : 100/80
Bandwidth:	40 Mhz Current : 40 Mhz	80 Mhz Current : 80 Mhz
Transmission Mode:	802.11b/g/n mixed	802.11a/n/ac mixed
Transmission Rate:	Auto	Auto
Multicast Rate:	Auto	Auto
OBSS Coexistence:	Enabled Disabled	Enabled Disabled
Security:	WPA-PSK/WPA2-PSK Encryption: TKIP+AES	WPA-PSK/WPA2-PSK Encryption: TKIP+AES
Pre-Shared Key:	P0xz8jeXSKbe	P0xz8jeXSKbe
Group Rekey Interval:	0 seconds	0 seconds

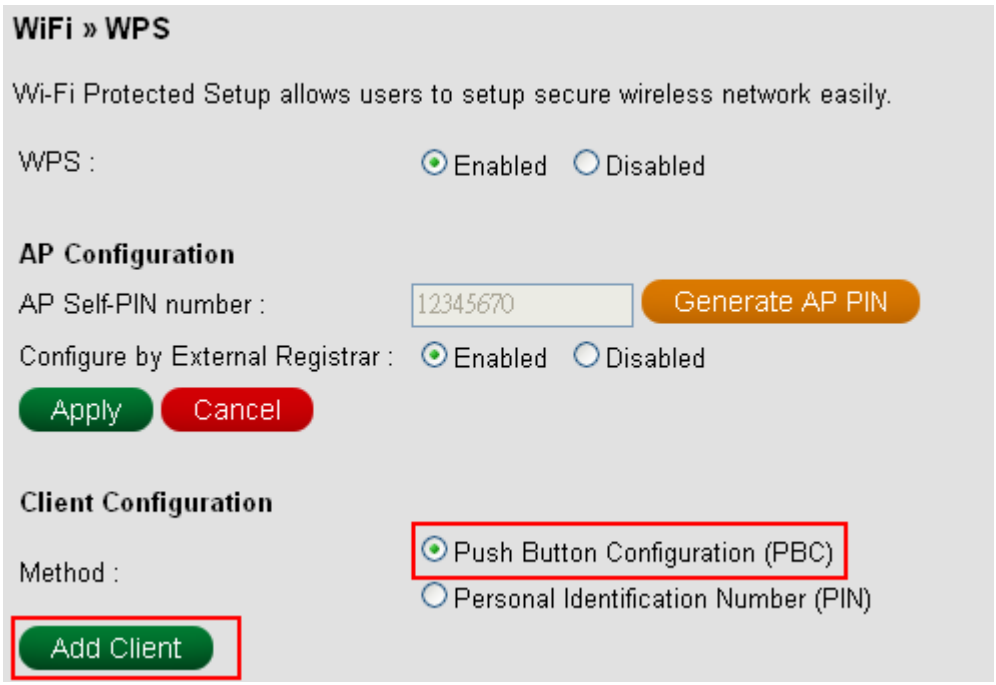
Apply Cancel Restore Wireless Defaults

Note: may differ according to local settings or requirements.

WPS

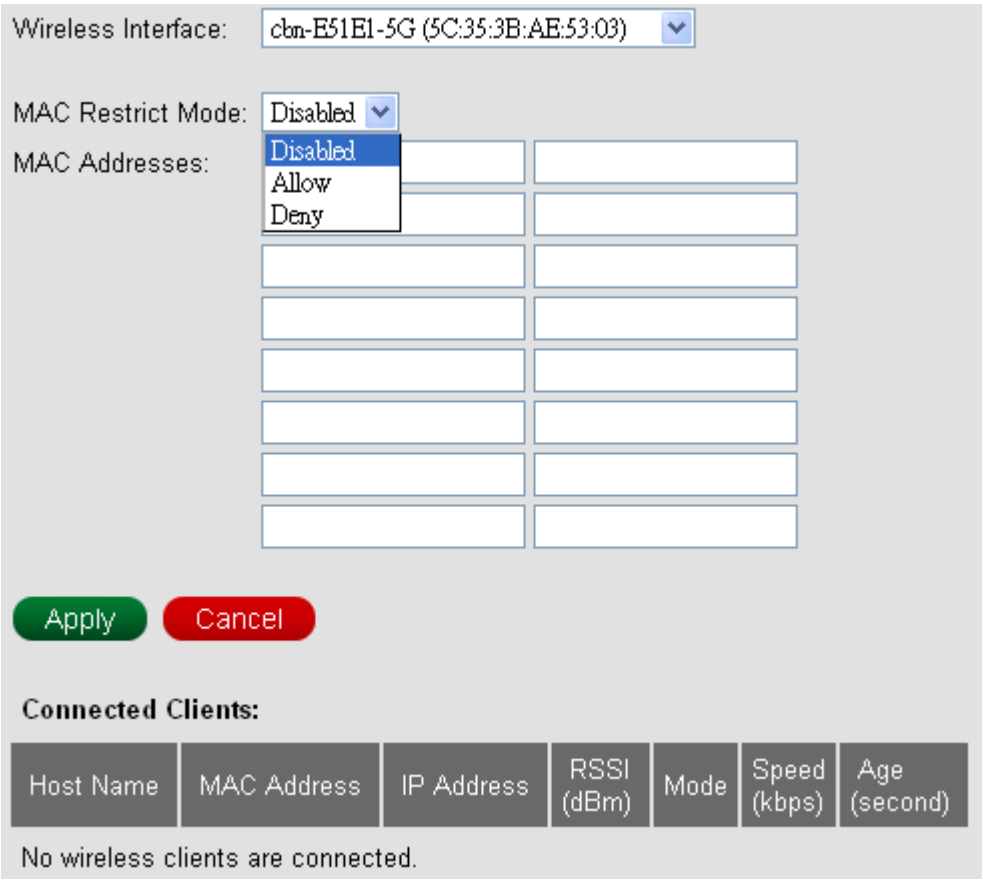
CG7486E provide WPS (Wi-Fi Protected Setup) function, with it enable will support WPS clients to join the network very easily. It is a standard for easy and secure establishment of a wireless network. With WPS you can setup and protect your wireless network in just a few easy steps.

We suggest users to press Add Client button to start WPS directly. By default, that will be PBC (Push Button Configuration) and easy for users.



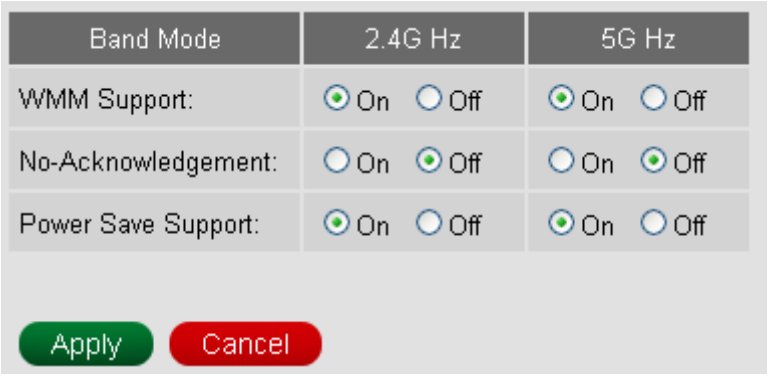
Access Control

This page allows users to specify those wireless clients that are allowed to connect to this device. This offers additional protection against unwanted connections. You can choose Allow or Deny rule at first, and then fill in the client MAC to enable access control function.



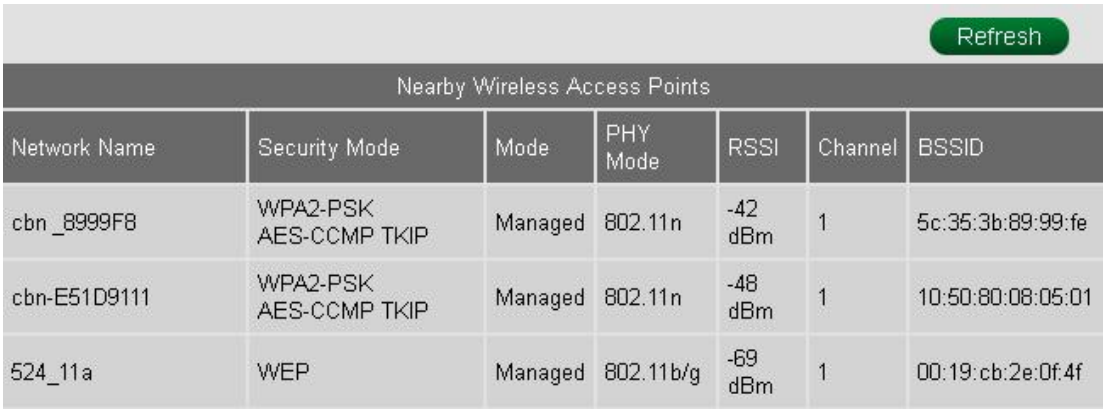
WMM

CG7486E provides WMM page to configure Wi-Fi Multimedia QoS. Actually, we suggest users to use default settings.



Neighbor APs

CG7486E supports Neighbor APs function and this page shows the details of all the nearby APs.



Refresh

Nearby Wireless Access Points

Network Name	Security Mode	Mode	PHY Mode	RSSI	Channel	BSSID
cbn _8999F8	WPA2-PSK AES-CCMP TKIP	Managed	802.11n	-42 dBm	1	5c:35:3b:89:99:fe
cbn-E51D9111	WPA2-PSK AES-CCMP TKIP	Managed	802.11n	-48 dBm	1	10:50:80:08:05:01
524_11a	WEP	Managed	802.11b/g	-69 dBm	1	00:19:cb:2e:0f:4f

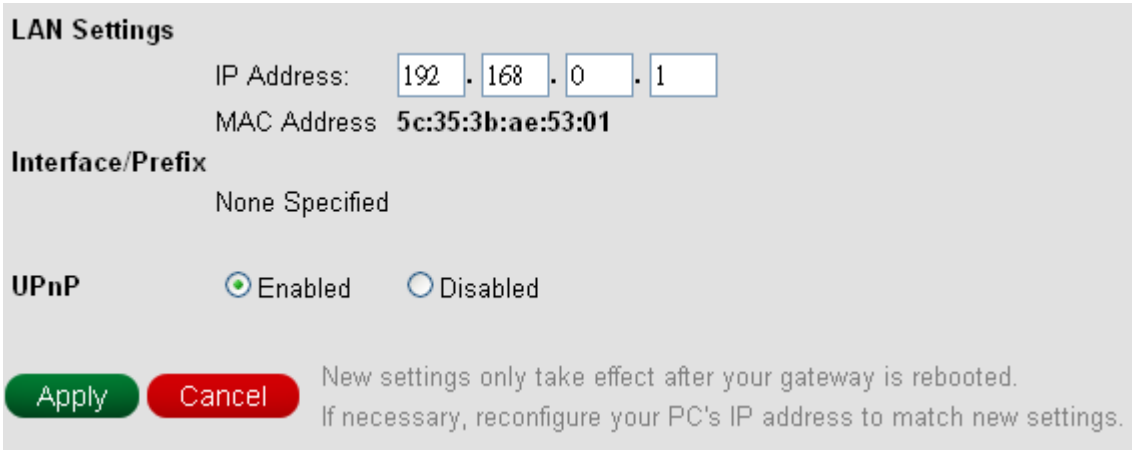
5 Router

The CABLE MODEM pages provide the information of cable connection status, channel signals and channel configuration during the establishment of cable connection to cable service provider's CMTS.

Basic

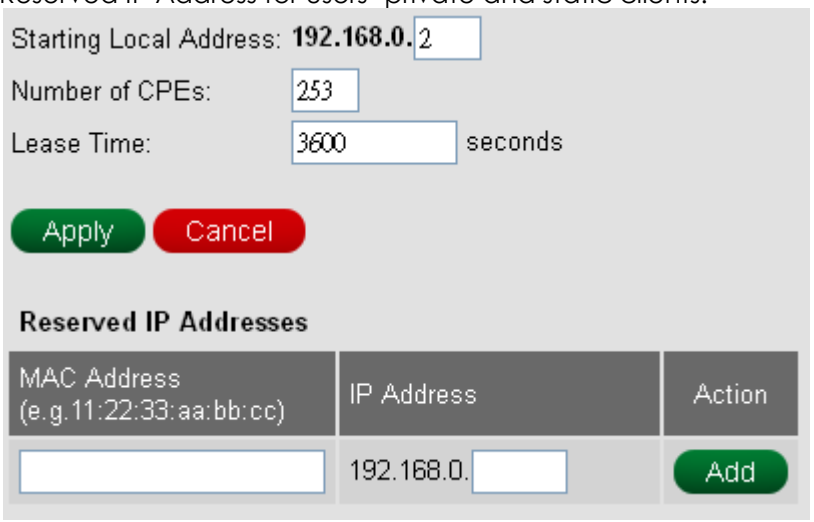
LAN Settings

CG7486E allows users to configure private LAN IP for their home gateway.



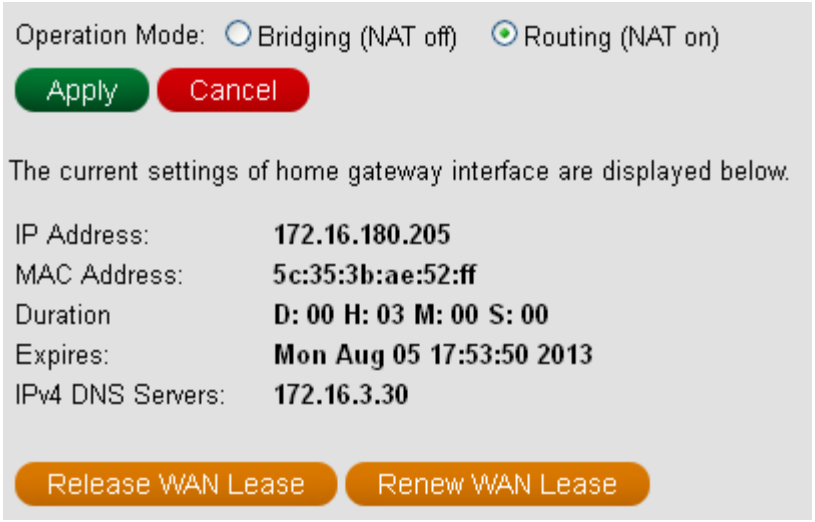
DHCP Server

CG7486E provides DHCP server to manage IP addresses to CPEs and supports Reserved IP Address for users' private and static clients.



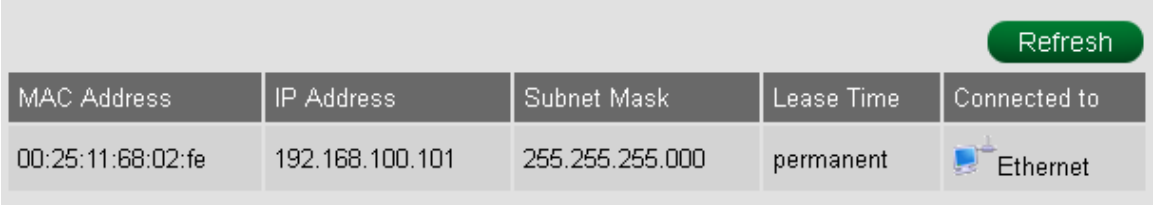
WAN Settings

This page displays WAN status after CG7486E gets online and provides users to change Operation Mode.

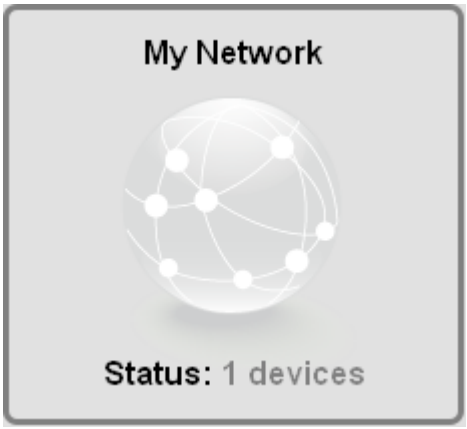

Operation Mode: Bridging (NAT off) Routing (NAT on)
Apply
Cancel
The current settings of home gateway interface are displayed below.
IP Address: 172.16.180.205
MAC Address: 5c:35:3b:ae:52:ff
Duration D: 00 H: 03 M: 00 S: 00
Expires: Mon Aug 05 17:53:50 2013
IPv4 DNS Servers: 172.16.3.30
Release WAN Lease
Renew WAN Lease

Network Map

This page shows how many CPEs connect to CG7486E.



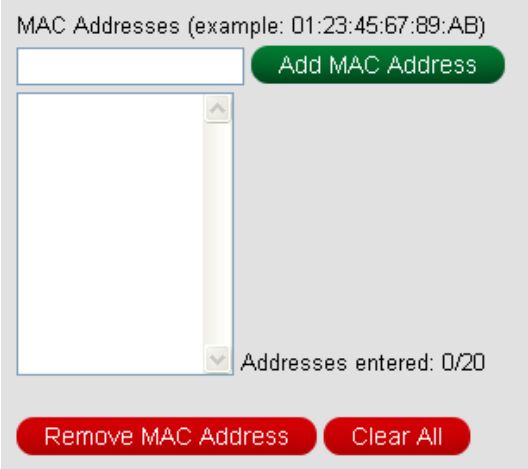
Users can browse here directly through the item at home index.



Advanced

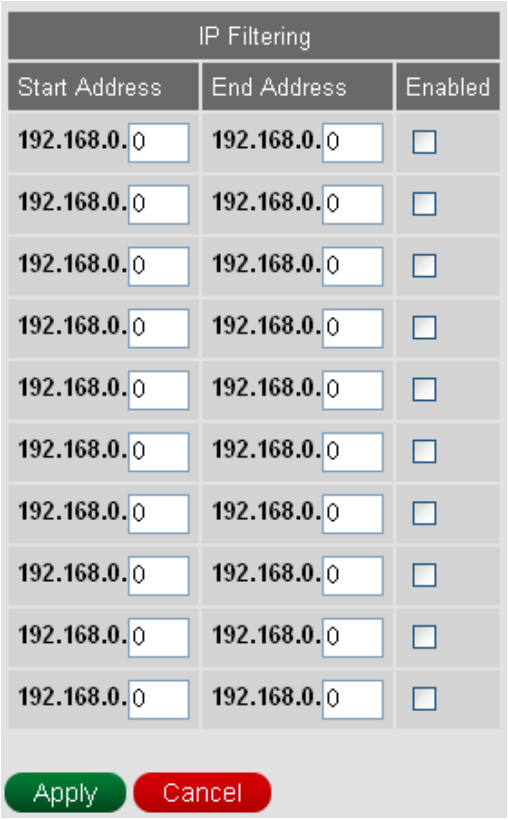
MAC Filtering

This page allows configuration of MAC address filters in order to block Internet traffic to specific network devices on your local network.



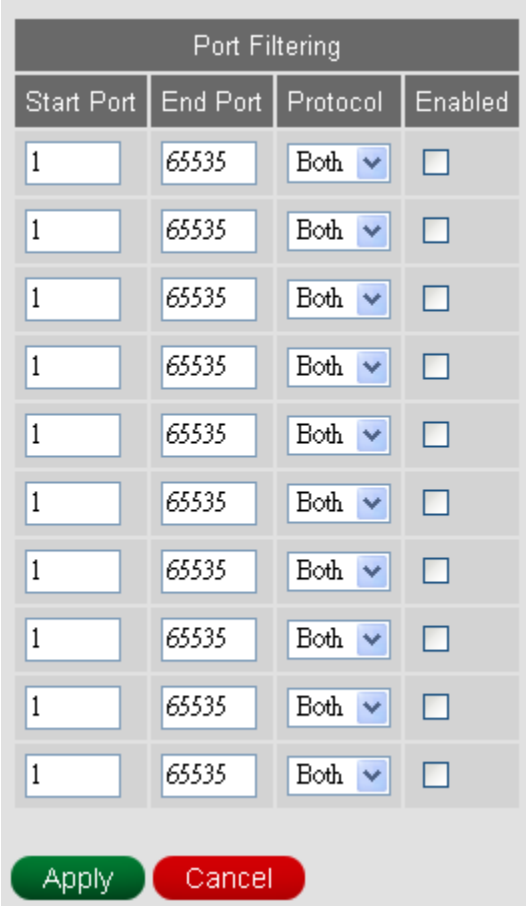
IP Filtering

This page allows you to specify the IP packet filtering rules to prevent the service accessed from the Internet hosts or limit the Internet access for local hosts.



Port Filtering

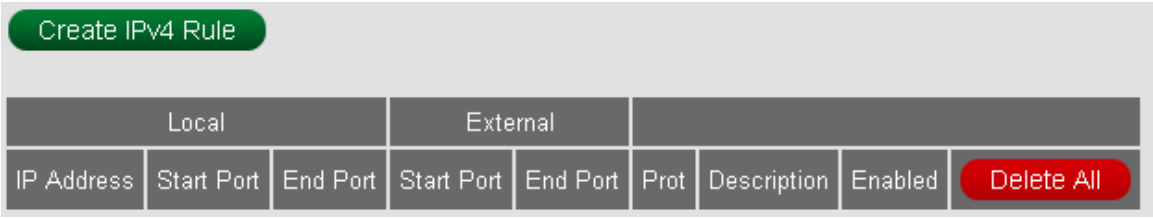
This page allows you to specify the IP packet filtering rules to prevent the service accessed from the Internet hosts or limit the Internet access for local hosts.



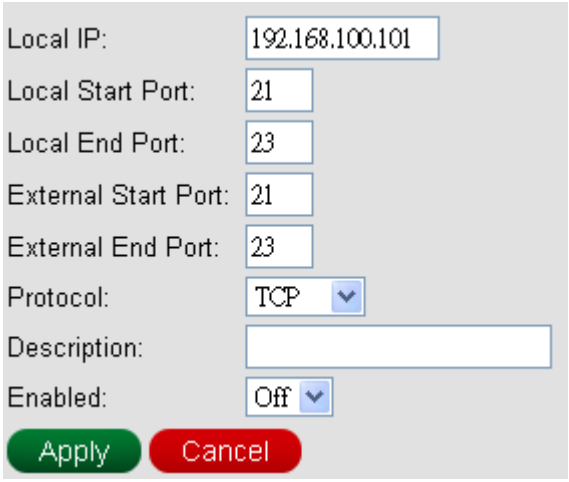
Port Forwarding

This allows for incoming requests on specific port numbers to reach web servers, FTP servers, mail servers, etc. so they can be accessible from the public Internet.

1. Press Create IPv4 Rule button to add new rules.



2. Fill in needed information, and then press Apply button.



3. One rule is created. And also, you can Modify or Delete the existed rules.

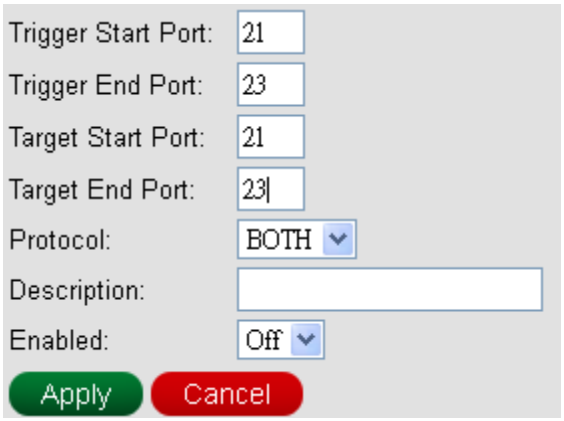
Local			External					
IP Address	Start Port	End Port	Start Port	End Port	Prot	Description	Enabled	Delete All
192.168.100.101	21	23	21	23	TCP		No	Modify Delete

Port Triggering

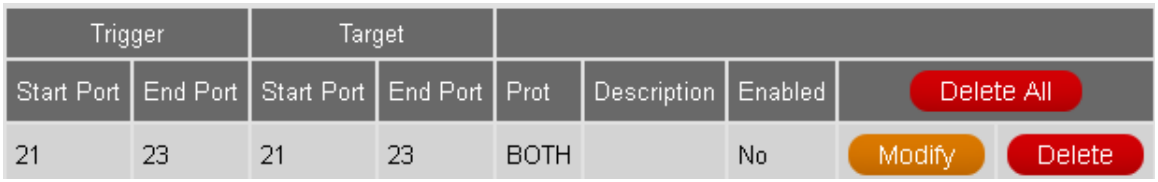
Port triggering function is a conditional port forwarding feature. When this device detects outbound traffic on a specific port (triggered ports), it will set up the port forwarding rules temporarily on the port ranges you specify to allow inbound traffic. This is supposed to increase the support for Internet gaming, video conferencing, and Internet telephony due to these applications require multiple connections.

1. Press Create Rule button to add Port Triggers.

2. Fill in needed information and Apply.



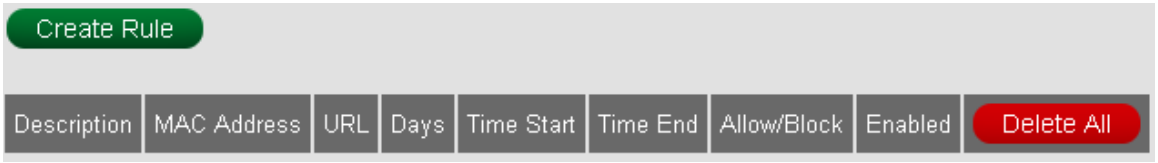
3. One new Port Trigger is generated. And also, you can Modify or Delete the existed Port Trigger.



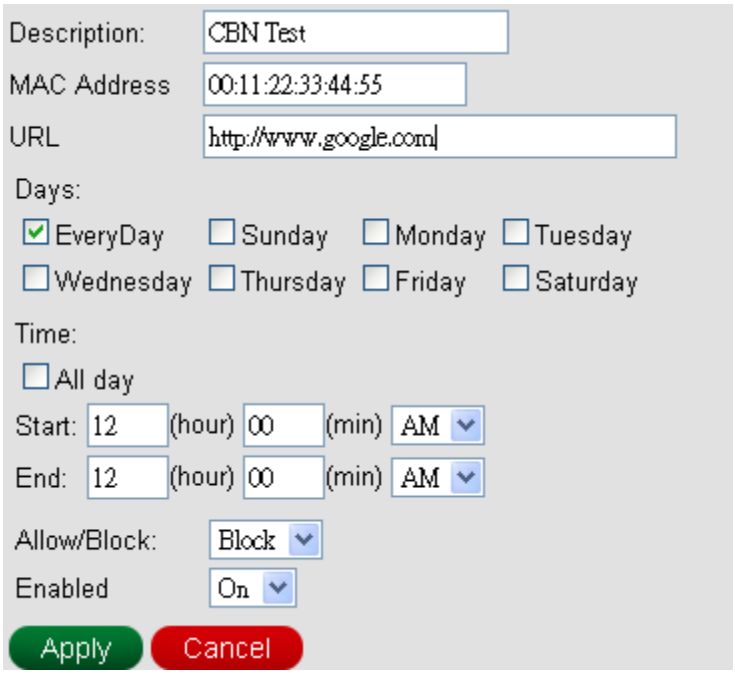
URL Filtering

This page is used to configure filtering of outbound connections and display configured filtering rule of firewall.

1. Press Create Rule button to add one filtering rule.



2. Configure outbound information and then press Apply button.



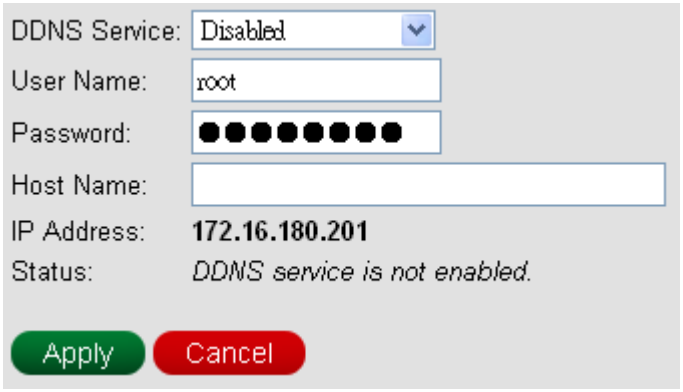
3. One rule is created. And also, you can Modify or Delete the existed rules.

DMZ

This page is for DMZ (Demilitarized Zone) configuration. You can fill in the exposed host and press Apply button.

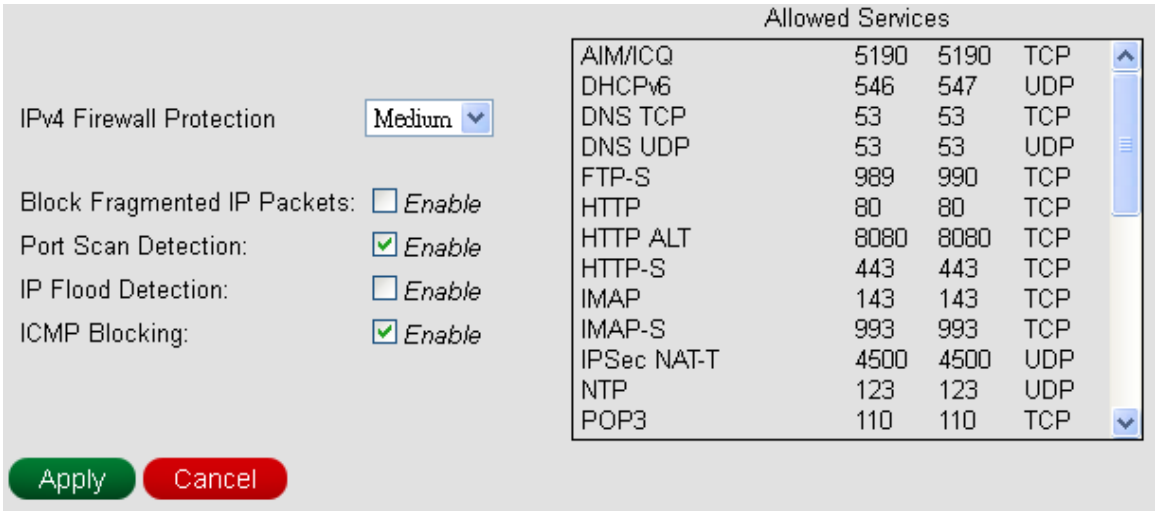
DDNS

This page is for DDNS (Dynamic DNS) configuration. You can fill in the registered DDNS information here, and then press Apply button to enable your DDNS function.



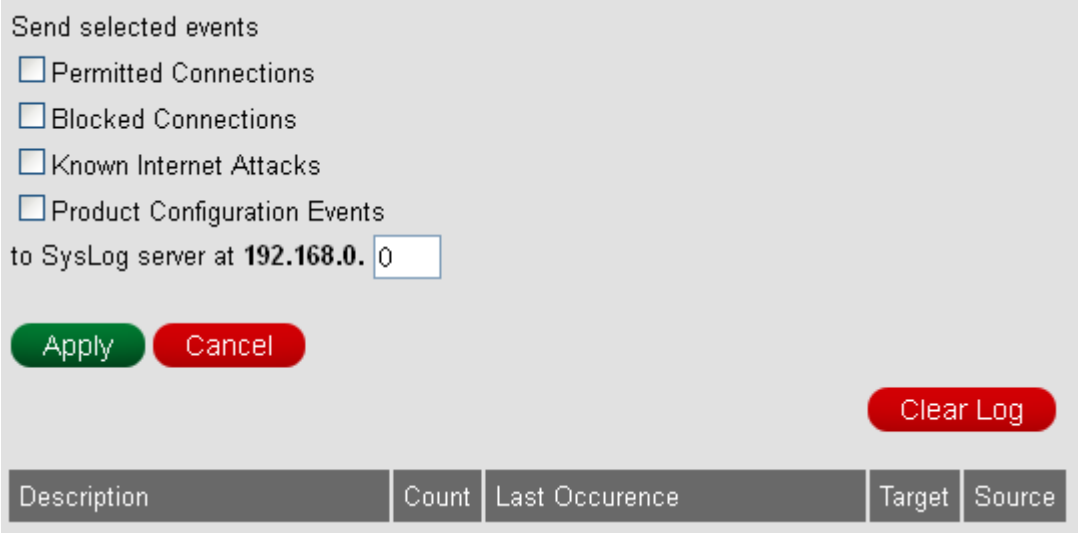
Firewall

This page is used to configure Firewall Protection level and display all allowed services.



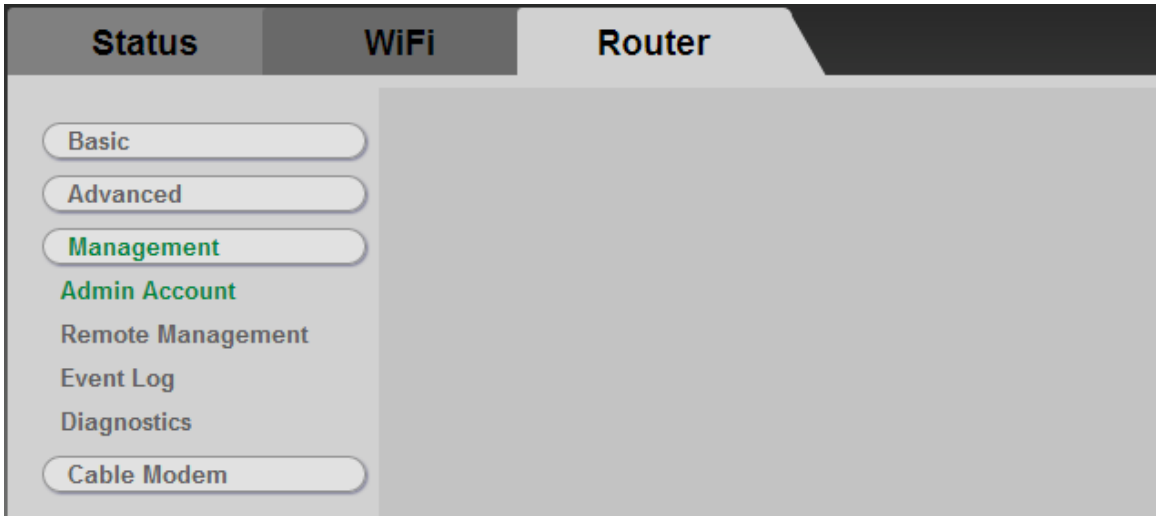
Firewall Logs

This page allows optional configuration of events to be sent to a local SysLog server.



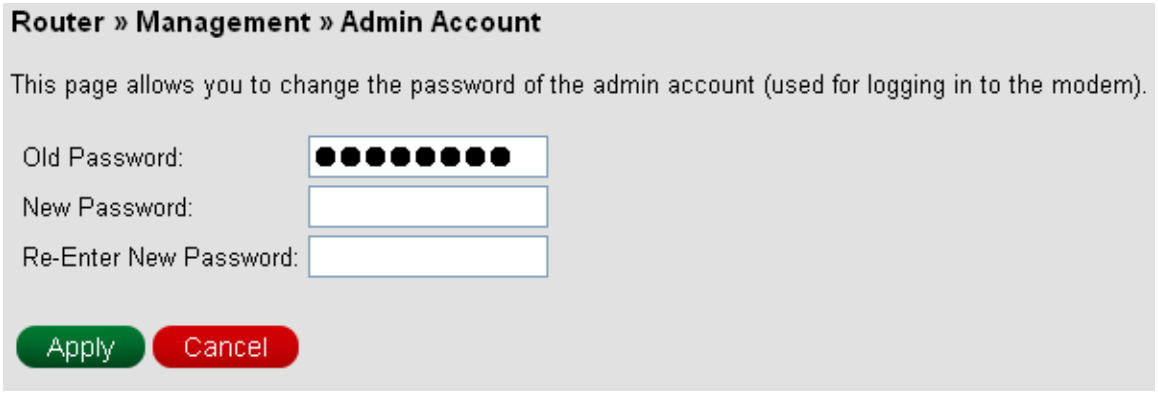
Management

The CG7486E support management for web browser login password including change password, CM even log, diagnostic tests and backup device current settings.

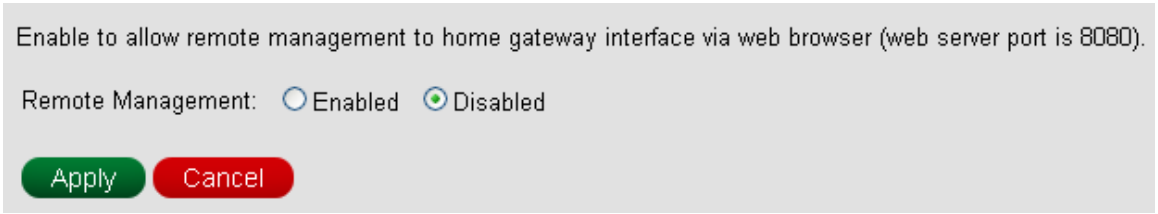


Admin Account

CG7486E allows changing admin password for web browser login. Configure Password and retype the Password again and then click Apply and when you login in next time, you must use this new password. For secure, we strongly suggest to change default password as soon as possible.

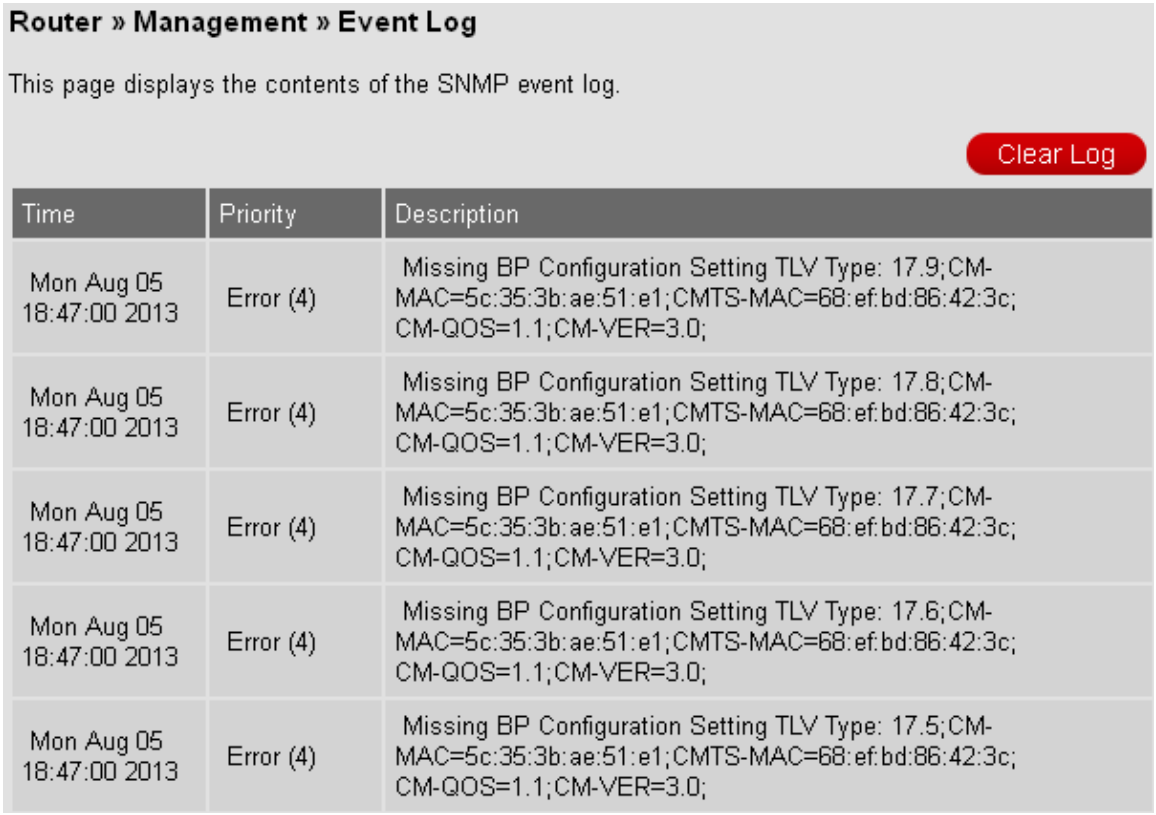

Router » Management » Admin Account
This page allows you to change the password of the admin account (used for logging in to the modem).
Old Password:
New Password:
Re-Enter New Password:
Apply
Cancel

Remote Management



Event Log

CG7486E allows users to review critical system events in chronological order in the SNMP event log. Also, users can press Clear Log button to clean all records.



Router » Management » Event Log

This page displays the contents of the SNMP event log.

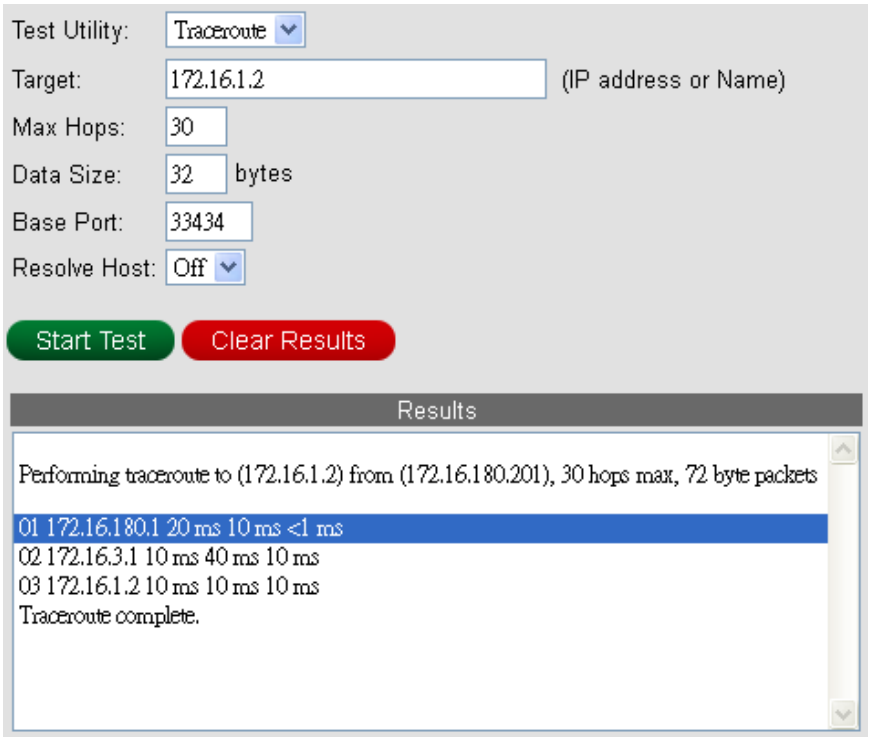
Clear Log

Time	Priority	Description
Mon Aug 05 18:47:00 2013	Error (4)	Missing BP Configuration Setting TLV Type: 17.9;CM-MAC=5c:35:3b:ae:51:e1;CMTS-MAC=68:ef:bd:86:42:3c;CM-QOS=1.1;CM-VER=3.0;
Mon Aug 05 18:47:00 2013	Error (4)	Missing BP Configuration Setting TLV Type: 17.8;CM-MAC=5c:35:3b:ae:51:e1;CMTS-MAC=68:ef:bd:86:42:3c;CM-QOS=1.1;CM-VER=3.0;
Mon Aug 05 18:47:00 2013	Error (4)	Missing BP Configuration Setting TLV Type: 17.7;CM-MAC=5c:35:3b:ae:51:e1;CMTS-MAC=68:ef:bd:86:42:3c;CM-QOS=1.1;CM-VER=3.0;
Mon Aug 05 18:47:00 2013	Error (4)	Missing BP Configuration Setting TLV Type: 17.6;CM-MAC=5c:35:3b:ae:51:e1;CMTS-MAC=68:ef:bd:86:42:3c;CM-QOS=1.1;CM-VER=3.0;
Mon Aug 05 18:47:00 2013	Error (4)	Missing BP Configuration Setting TLV Type: 17.5;CM-MAC=5c:35:3b:ae:51:e1;CMTS-MAC=68:ef:bd:86:42:3c;CM-QOS=1.1;CM-VER=3.0;

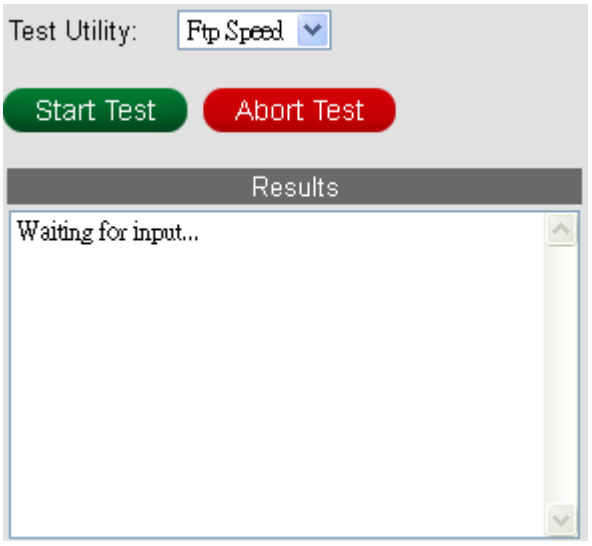
Diagnostics

CG7486E allows users to ping diagnostics (LAN) and trace route (WAN) to help with IP connectivity problems. And the FTP speed test tool can help to measure the bandwidth of your downstream Internet connection. You can fill in the IP to the Target and Start Test.

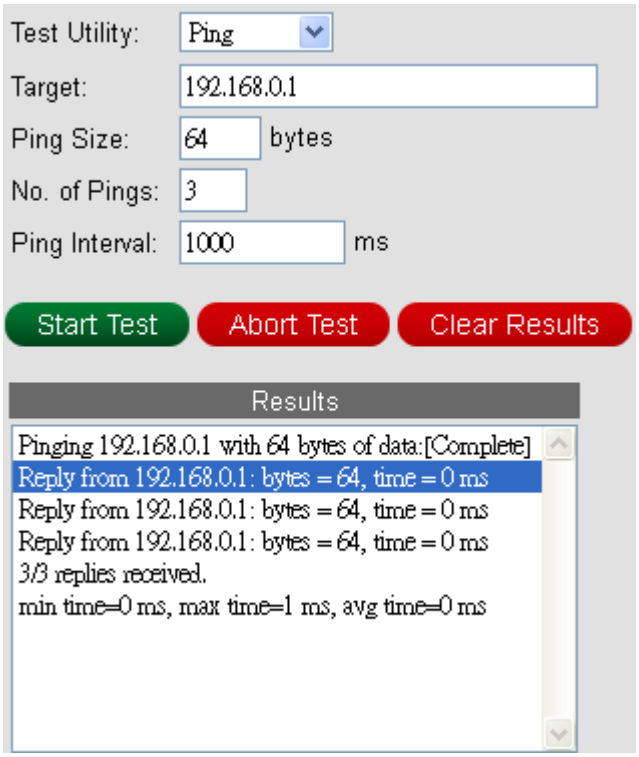
- Trace route Test (WAN)


Test Utility: Traceroute
Target: 172.16.1.2 (IP address or Name)
Max Hops: 30
Data Size: 32 bytes
Base Port: 33434
Resolve Host: Off
Start Test
Clear Results
Results
Performing traceroute to (172.16.1.2) from (172.16.180.201), 30 hops max, 72 byte packets
01 172.16.180.1 20 ms 10 ms <1 ms
02 172.16.3.1 10 ms 40 ms 10 ms
03 172.16.1.2 10 ms 10 ms 10 ms
Traceroute complete.

- FTP Speed Test



Ping Diagnostics Test (LAN)



Cable Modem

Device Information

CG7486E allows a page to show current status of this home gateway.

Standard Specification Compliant	DOCSIS 3.0
Hardware Version	V1.0
Software Version	CG7486E-5.510.3.1d-SH
Cable Modem MAC Address	5c:35:3b:ec:8e:2d
Cable Modem Serial Number	6067994125000441010108 80
System Up Time	0 days 00h:24m:05s
Network Access	Denied

Note: may differ according to local settings or requirements.

Connection

This page shows information on the status of the cable modem's HFC and IP network connectivity.

Startup Procedure		
Procedure	Status	Comment
Acquire Downstream Channel	410000000 Hz	Locked
Connectivity State	OK	Operational
Boot State	OK	Operational

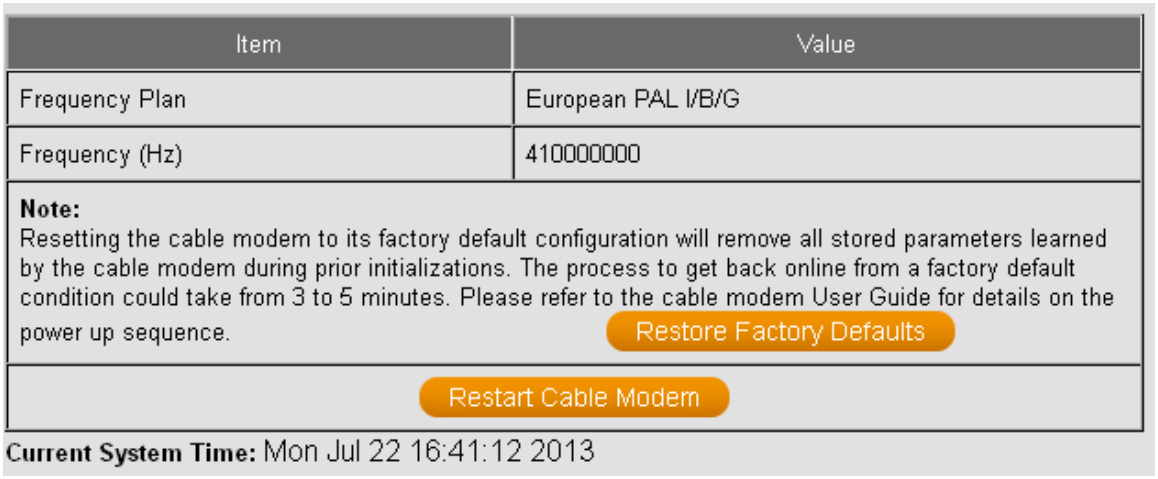
Downstream Bonded Channels								
Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Correctables	Uncorrectables
1	Locked	QAM64	124	410000000 Hz	1.7 dBmV	49.3 dB	0	0
2		Unknown		0 Hz	0.0 dBmV	0.0 dB	0	0
3		Unknown		0 Hz	0.0 dBmV	0.0 dB	0	0
4		Unknown		0 Hz	0.0 dBmV	0.0 dB	0	0
5		Unknown		0 Hz	0.0 dBmV	0.0 dB	0	0

Total Correctables	Total Uncorrectables
0	0

Upstream Bonded Channels						
Channel	Lock Status	US Channel Type	Channel ID	Symbol Rate	Frequency	Power
1	Locked	ATDMA	1	1280 Ksym/sec	35000000 Hz	53.0 dBmV
2	Not Locked	Unknown	0	0 Ksym/sec	0 Hz	0.0 dBmV
3	Not Locked	Unknown	0	0 Ksym/sec	0 Hz	0.0 dBmV
4	Not Locked	Unknown	0	0 Ksym/sec	0 Hz	0.0 dBmV

Configuration

This page provides information about the manually configurable settings of the Cable Modem.



Item	Value
Frequency Plan	European PAL I/B/G
Frequency (Hz)	410000000

Note:
Resetting the cable modem to its factory default configuration will remove all stored parameters learned by the cable modem during prior initializations. The process to get back online from a factory default condition could take from 3 to 5 minutes. Please refer to the cable modem User Guide for details on the power up sequence.

Restore Factory Defaults

Restart Cable Modem

Current System Time: Mon Jul 22 16:41:12 2013

6 Troubleshooting

If the solutions listed here do not solve your problem, contact your service provider.

Before calling your service provider, try pressing the Reset button on the rear panel of the CG7486E. Please note, if you press the Reset button, you will lose all your custom configuration settings, including Firewall and Advanced settings. Your service provider may ask for the front panel LED status; see Front-Panel LEDs and Error Conditions.

Solutions

Table 1 – Troubleshooting Solutions

Problem	Possible Solution
Power light is off	Check that the CG7486E is properly plugged into the electrical outlet. Check that the electrical outlet is working.
Cannot send or receive data	On the front panel, note the status of the LEDs and refer to Front-Panel LEDs and Error Conditions to identify the error. If you have cable TV, check that the TV is working and the picture is clear. If you cannot receive regular TV channels, the data service will not function. Check the coaxial cable at the CG7486E and wall outlet. Hand-tighten, if necessary. Check the IP address. Check that the Ethernet cable is properly connected to the CG7486E and the computer. If a device is connected via the Ethernet port, verify connectivity by checking the LINK LEDs on the rear panel.

Problem	Possible Solution
Wireless client(s) cannot send or receive data	Perform the first four checks in "Cannot send or receive data." Check the Security Mode setting on the Wireless Security Page: • If you enabled WPA and configured a passphrase on the CG7486E, be sure each affected wireless client has the identical passphrase. If this does not solve the problem, check whether the wireless client supports WPA. • If you enabled WEP and configured a key on the CG7486E, be sure each affected wireless client has the identical WEP key. If this does not solve the problem, check whether the client's wireless adapter supports the type of WEP key configured on the CG7486E. • To temporarily eliminate the Security Mode as a potential issue, disable security. After resolving your problem, be sure to re-enable wireless security. • On the Wireless Access Control Page, be sure the MAC address for each affected wireless client is correctly listed.
Slow wireless transmission speed with WPA enabled	On the Wireless Primary Network Page, check whether the WPA Encryption type is TKIP. If all of your wireless clients support AES, change the WPA Encryption to AES.

Front-Panel LEDs and Error Conditions

The CG7486E front panel LEDs provides status information for the following error conditions:

Table 2 – Front-Panel LEDs and Error Conditions

LED	Status	if, During Startup:	if, During Normal Operation:
POWER	OFF	CG7486E is not properly plugged into the power outlet	The CG7486E is unplugged
ONLINE	FLASHING	IP registration is unsuccessful	The IP registration is lost

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